

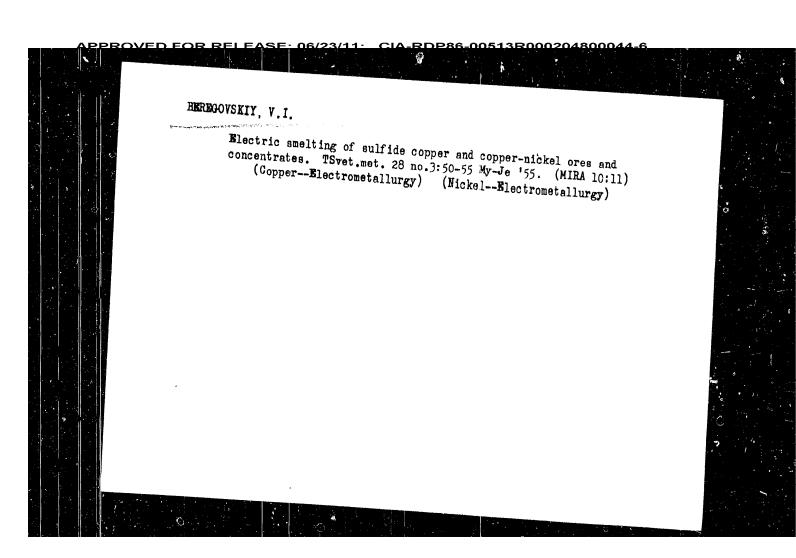
BEREGOVSKIV, V. I. 137-58-5-9221 Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 66 (USSR) AUTHOR: Beregovskiy, V. I. The "Yuzhuralnikel" Kombinat on the 40th Anniversary of the TITLE: Great October Revolution (Kombinat "Yuzhuralnikel" k 40letiyu Velikogo Oktyabrya) PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 19-20, pp 68-72 ABSTRACT: Comments on technical achievements in production technology at the "Yuzhuralnikel'" Kombinat. 1. Metallurgy--USSR G.S. Card 1/1

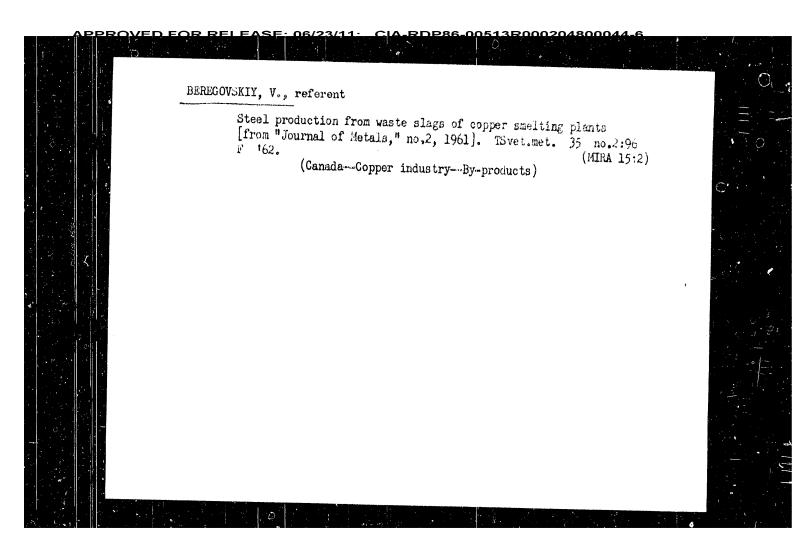
RERECOVENIT. Vladimir Iosifovich; QUDIMA, Mikolay Vasil'yevich; Vanyukov,

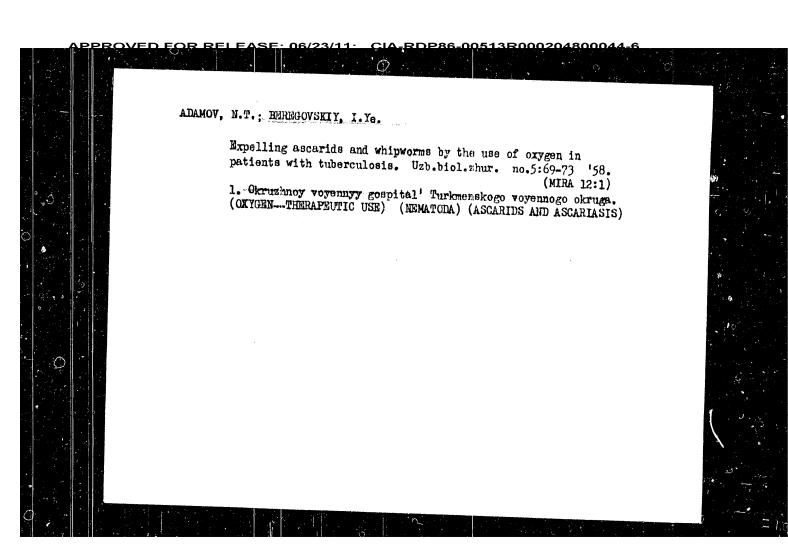
V.A., professor doktor, zasluzhennyy deyatel' nauki i tekhniki,
retsenzent; YANYUKOV, A.V., dotsent, kandidat tekhnicheskikh nauk,
inzhener, retsenzent; RESHETNIKOV, P.G., redsenzent; ARKHANKILSKAYA,
M.S., redaktor izdatel'stva; ATTOPOVICH, M.K., tekhnicheskiy

[Bickel metallurgy; a textbook for schools and courses for specialists]
Metallurgia nikelia; uchebnoe posoble dlia shkol i kursov masterov.
Moskva, Gos, nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi
(Micke)-Metallurgy)

(MIRA 9:10)







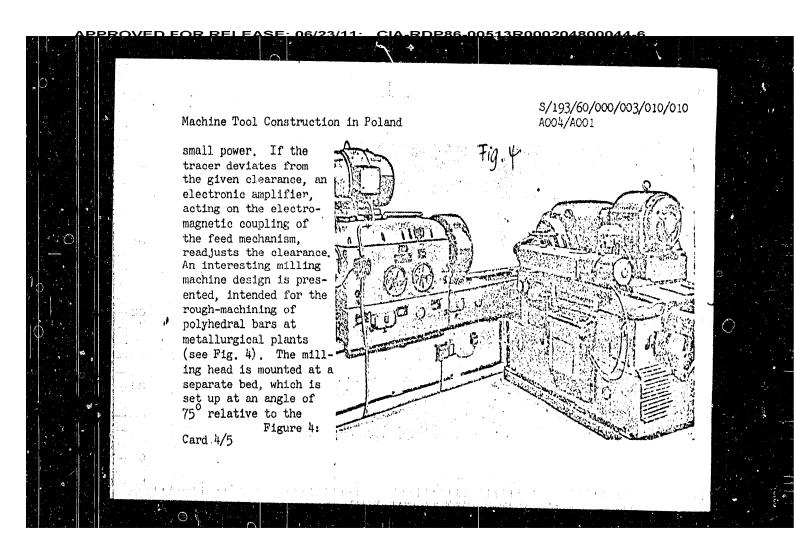
APPROVED FOR RELEASE: 06/23/11:_ CIA-RDP86-00513R000204800044-6

Machine Tool: Construction in Poland

3/193/60/000/003/010/01c A004/A001

center axis of the component stocks. The machine has an electric copying system. The following technical data of this machine are available; bar side dimensions ~ 270-400 mm; maximum length ~ 1,500 mm; power of the electric milling head drive ~ 55 kw; weight ~ 18 tons. The author points out that Poland is exporting a considerable part of her products. In 1958 1,700 machine tools totaling 40 million rubles were exported to various countries. During the first half of 1959 the machine tool export amounted to 711 units. There are 4 figures.

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Machine Tool Construction in Poland

S/193/60/000/003/010/010 A004/A001

the following technical data: machining diameter range - 40-1%0 mm; maximum turning length - 1,000 mm; range of spindle speeds - 118-1,500 rpm; range of longitudinal feeds - 0.1-1.5 mm/rev; power of main electric motor - 20 kw; weight - 6,000 kg. Next the author mentions the original design of a four-carriage lathe for the machining of worn and new wheel sets. Two from carriages with uniform longitudinal feeds are rough-machining both wheels of the set, while the two copying carriages at the rear are intended for the finishing of the wheel profile. The operating cycle of the machine is fully automated, and the machine is equipped with a hoist for the setting and removing of the wheel sets. The following technical characteristics of the machine are given: diameters of wheeling surface of the wheel sets being machined - 750-1,120 mm; distance between centers - 750-1,120 mm; spindle speed range - 1.5-42.5 rpm; feed range - 1-40 mm/ rev; power of each spindle stock electromotor - 24 kw; output during 8 hours -30-42 wheel sets; weight - 35 tons. Besides wheel lathes, the "Rafamet" Plant produces vertical boring and turning lathes for the machining of seamless rolled wheels and bandage wheel centers. An interesting design of a vertical copying milling machine was shown at the exhibition. The tracer is not in contact with the template but follows its contours with a constant clearance of 25 . Tracer and template are under the effect of an 800 v electric current of an infinitely

Card 3/5

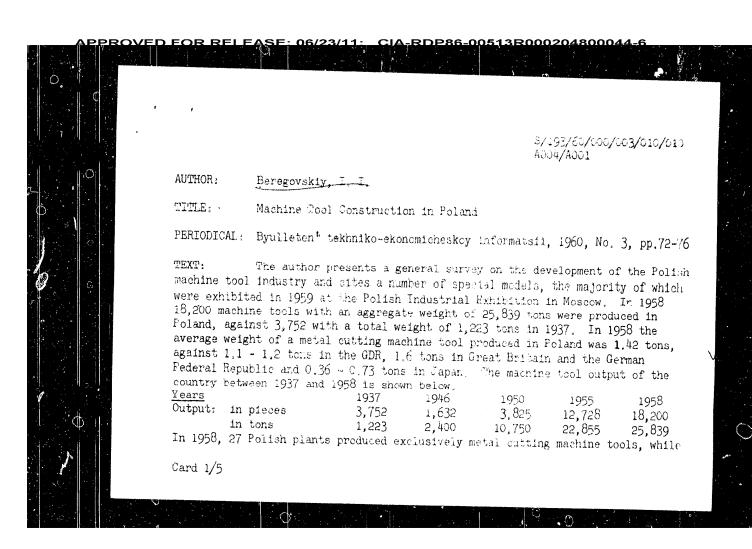
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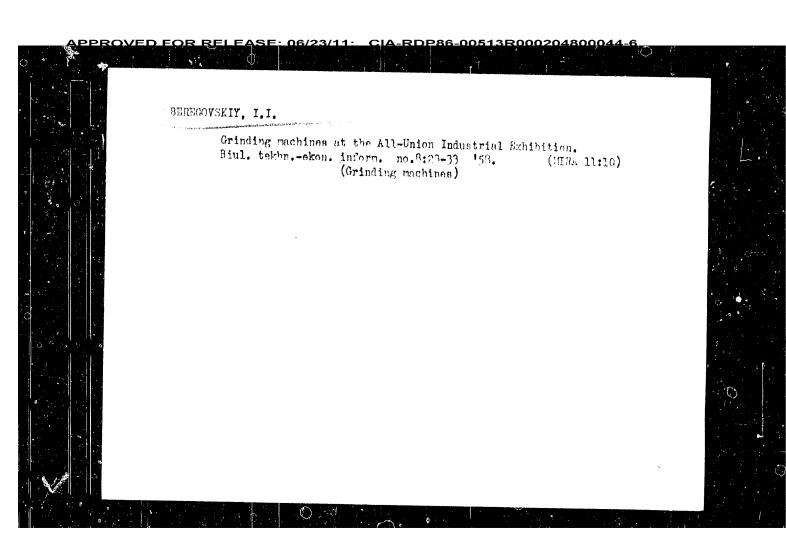
Machine Tool Construction in Poland

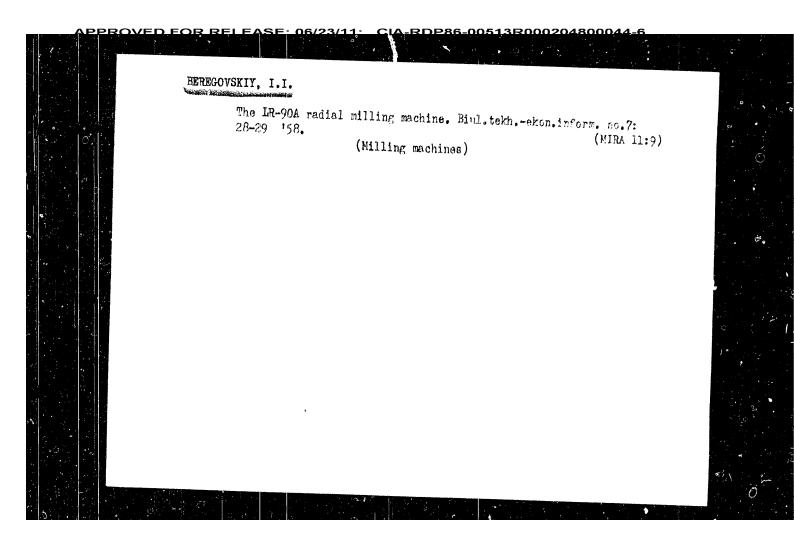
S/193/60/000/003/010/010 A004/A001

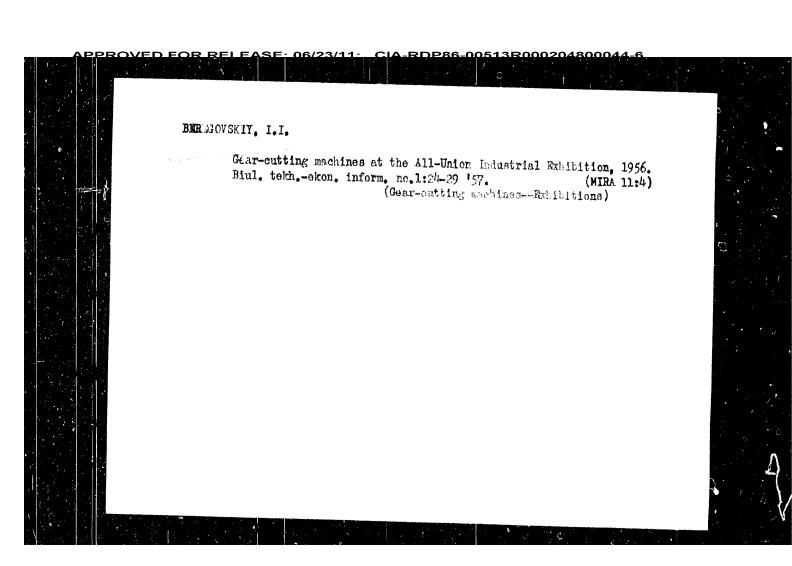
another 13 plants produced machine tools besides other products. The number of types and sizes of fabricated machine tools increased from 38 in 1946 to 180 in 1958. Besides heavy lathes with swings of 1,250 and 1,600 mm, parallel-planing machines with 1,600 and 2,250 mm width of table, vertical boring and turning machines of up to 7 m in diameter and roll-grinding machines with a grinding diameter of up to 1,250 mm are produced. The spindle speeds and the power of the main electromotors of lathes and milling machines makes it possible to utilize the cutting properties of up-to-date sintered carbide tools. Besides, multipurpose machine tools are fabricated, e.g. serew-cutting lathes with a height of centers of 215 mm and spirdle speeds up to 600 rpm, the 2FXA cantilever milling machines with spindle speeds up to 1,000 rpm and others. On many machine tools the electromagnetic couplings manufactured by the Austrian firm Messrs. Haid are used. A screw-cutting lathe with a swing of 1,250 mm over the bed, exhibited at the Polish industrial Fair in Moscow is equipped with a synchronization system of the feed of the longitudinal carriage slide and the transverse slide of the upper part of the carriage. Besides it has a rapid carriage displacement mechanism and the tail stock can travel automatically. The author then mentions the TGA-18 semi-automatic copying lathe with a horizontal spindle and an inclined carriage mounted underneath the spindles beyond the centerline of the machine. He presents

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PPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800044-6

ACCESSION NR: AR4032160

the stilbene crystal from the compound spectrum produced by the counter and with the NaI(T1). The subtraction of the Compton distribution is carried out automatically during the course of the measurements with the γ spectrometer. The recording unit consists of an AADO-1 single-channel pulse-height analyzer and a PS-100 scaler unit. At the input of the analyzer there are two linear transmission circuits controlled by a flipflop, while at the output there is a blocking transmission circuit controlled by a univibrator. The pulses from the two inputs are registered alternately. Whenever the pickformed to direct and inverse codes. To this end, a pulse is applied simultaneously to both grids of all the flipflops of the scaler circuit. The channel switching frequency is set by means of a blocking generator and amounts to 10 cps. M. Vishnevskiy.

DATE ACQ: 31Mar64

SUB CODE: SD, PH

ENCL: 00

Card 2/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800044-6

ACCESSION NR: AR4032160

S/0058/64/000/002/A019/A019

SOURCE: Ref. zh. Fiz., Abs. 2A189

AUTHOR: Beregovskiy, A. S.

TITLE: Difference recording unit for a two crystal spectrometer

CITED SOURCE: Tr. 5-y Nauchno-tekhn. konferentsii po yadern. radioelektronike. T. 2. Ch. 1. M., Gosatomizdat, 1963, 166-170

TOPIC TAGS: pulse difference recorder, two crystal spectrometer, Compton spectrum subtraction, automatic Compton spectrum subtraction

TRANSLATION: A simple circuit is proposed for recording the difference between the number of pulses fed from two pickups. The instrument is part of a two-crystal γ spectrometer consisting of two scintillation counters with different crystals (NaI(T1) and stilbene), and subtracts the Compton spectrum of the scintillation counter with

Cord 1/2

A two-dimensional 1024 channel ...

25378 \$/089/61/011/001/007/010 B102/B214

Compton). The group of coincidences for partial absorption in each of the two crystals, is represented by the surface part designated "Compton -Compton". Scintillation counters with photomultipliers of the type 43 y 10 (FEUIS) and NaI (T1) crystal of 30 mm length and 20 mm height were employed for taking the spectrum. The resolving time of the coincidence circuit was ~1 msec. The authors thank Yu. S. Zamyatnin on whose initiative the work was carried out; V. M. Gorbachev for discussion and interest, and L. P. Bilibin for help. There are 1 figure and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The three references to English-language publications read as follows: Ref.1: L. Grodzins. Proceedings of the Second United Nations Inter. Conference on the Peaceful Uses of Atomic Energy. Vol. 14, Geneva, 1958, p. 351. Ref.2: M. Birk, T. Braid, R. Detenbeck. Rev. Scient. Instrum., 29, 203 (1958). Ref. 3: P. Cavanagh, Boyce. Rev. Scient. Instrum., 27, 1028 (1956).

SUBMITTED: April 6, 1961

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A two-dimensional 1024 channel

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channels are arranged in the form of a matrix (32.32 ± 1024) . The channels of the magnetic storage system (with ferrite nuclei) have each a capacity of 16,000 pulses. The informations are made visible on the screens of two cathode-ray tubes of the type 13M037 (13L037). The information is represented on the screen of one of the tubes in a linear system with ~10% accuracy, and on that of the other in a two-de adic system in the form of an optically modulated point screen. The analyzer works with vacuum tubes and semiconductor diodes; in all it contains 360 tubes. The apparatus operates on a.c. mains (220 v, 50 cps) and consumes 2.5 kw. Its size is 2000.900.800 mm. The apparatus is easy to control, and has a reliable uninterrupted working for 8 hours. The temporal distribution of two correlated processes can also be studied with its help. The figure shows a two-dimensional spectrum of the Co 60 radiation taken by means of this apparatus. The spectrum shows three groups of possible coincidences. The group of coincidences for complete absorption of the Y-rays with the energies 1.17 and 1.33 Mev in both crystals (photopeak) is represented by two vertices: 1.17; 1.33 Mev. and 1.33; 1.17 Mev. The group coincidences for complete absorption in the one, and partial absorption in the other crystal (Compton scattering) is represented by four "ridges" (photopeaks -

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S/089/61/011/001/007/010 B102/E214

AUTHORS:

Rostovtsev, A. A., Il'in, Yu. I., Beregovskiy, A. S., Tishin, V. G., Zezyulin, V. Ye., Yermakov, B. A.

TITLE:

A two-dimensional 1024 channel pulse-height analyzer of the

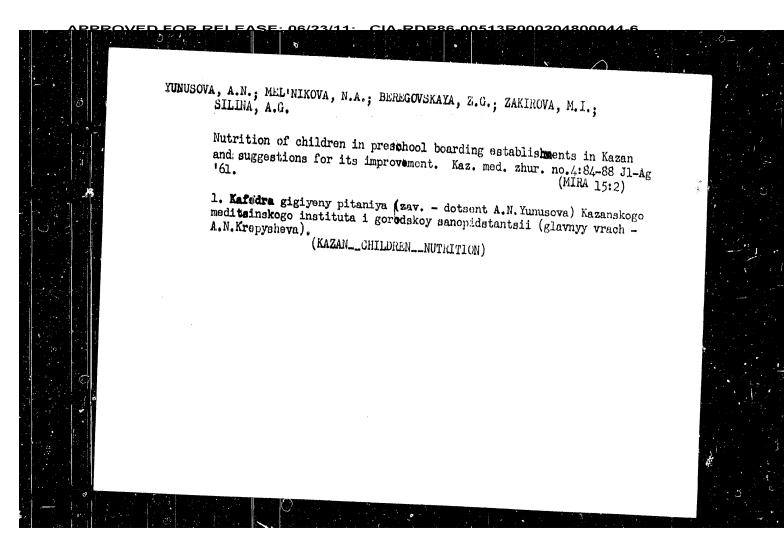
PERIODICAL:

Atomnaya energiya, v. 11. no. 1, 1961, 58 - 59

TEXT: The two-dimensional amplitude analyzers developed in the west suffer from certain shortcomings. For example, the one described in Ref. 1 allows only for a qualitative study of the spectrum; those described in Refs. 2 and 3, though allowing for quantitative study, have two-stage recording and the results can not be observed during the experiment. These have some other disadvantages, too. The authors of this "Letter to the Editor" have developed and constructed a two-dimensional pulse-height analyzer with 1024 channels; it wears the designation DMA-1024. It consists of a recorder block and two equal sorting instruments "X" and "Y" into which the pulses of the detectors are fed; these are recorded and processed only under certain given conditions of coincidence The anlyzer

Investigation of the Density Distribution in the Detonation Front of Gas Mixtures by the X-Ray-examination Method SOV/20-125-6-33/61 of gas, with a density that is from three to four times that of the original density, was found to exist in the front of the detonating wave. Figure 1 shows the density distribution in pure krypton and in the detonating wave of a mixture of detonating gas and krypton. The authors thank N_{\circ} N. Orlova for her collaboration, Ye. I. Leont'yeva for taking part in the experiments of 1945, and R. M. Zaydel; for his assistance in carrying out calculations. There are 1 figure and 10 references, 4 of which are Soviet. ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute for Chemical Physics of the Academy of Sciences, USSR) SUBMITTED: February 16, 1959 Card 2/2

5 (4), 2 (5) AUTHORS: Rivin, M. A. (Deceased), Zel'dovich, Ya. B., Academician, Tsukerman, V. A., Sof'ina, V. V., SOV/20-125-6-33/61 TITLE: Investigation of the Density Distribution in the Detonation Front of Cas Mixtures by the X-Ray-examination Method (Issledovaniye raspredeleniya plotnosti vo fronte detonatsii gazovykh smesey rentgenograficheskim metodom) PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 6, ABSTRACT: The investigation mentioned in the title was begun in 1945, but had to be interrupted because of the illness and death of M. A. Rivin. It was resumed in 1957. The method employed in the present investigation uses a needle-shaped pulse tube (Ref 10) with zirconium anode as a source, and krypton, which is added to the detonating gas, as an absorbing medium. The characteristic radiation of zirconium ($\lambda_k = 0.788$ %) incides upon the absorption band of krypton. This combination made it possible to detect density variations in relatively thin layers of gas mixtures. The main result is that a thin layer Card 1/2



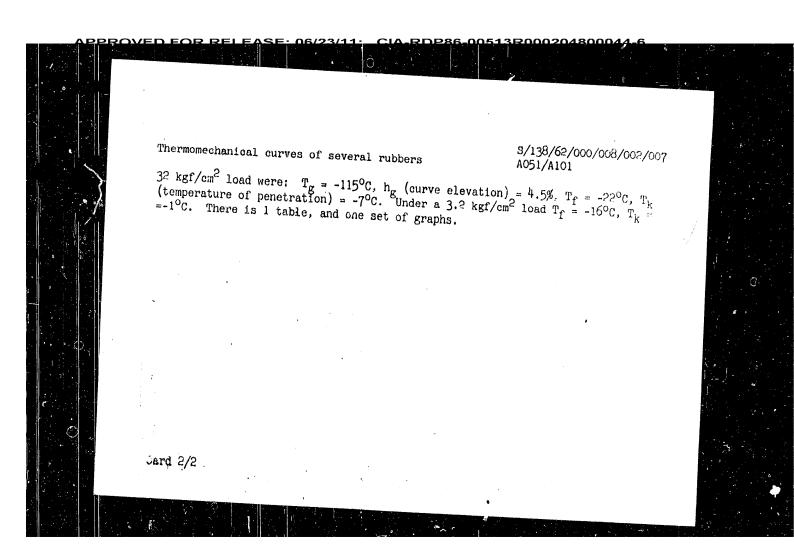
VOLKOVA, Ye,N., MOSKYINA, T.N., MEL'NIKOVA, N.A., BEREGOVSKAYA, Z.C.

Problem of organizing an effective diet. Vop.pit. 17 no.5:81-83 (NIRA 11:10)

1. Iz kafedry gigiyeny pitaniya (zav. - dots. A.N. Yumusov) Kazanekogo meditsinekogo instituta.

(DIET,

balanced diet arrangement (Rua))



15,9200

8/138/62/000/008/002/007 A051/A;01

AUTHORS:

Teytel baum, B. Ya., Dianov, M. P., Beregovskaya, M. G., Yagfarova,

TITLE:

Thermomechanical curves of several rubbers

PERIODICAL: Kauchuk i rezina, no. 8, 1962, 3 - 6

The thermomechanical curves of several rubbers under various loads, within a temperature interval from -120 to +450°C, were recorded, using an automatic recorder. The method of continuous weight application was used. The resultant curves reflected the characteristic qualities of the investigated rubbers, leading to the derivation of certain quantitative units: Tg - vitrification temperature, Tf - fluidity temperature; and a relative evaluation of the degree of deformation of the material at any given temperature. The curves were plotted over temperature - deformation coordinates by a recorder designed at the Kazan' branch of the Academy of Sciences of the USSR. The thermomechanical curves produced are shown in figures. The CKI (SKD) curve is thought to be influenced by the presence of a crystalline phase. The figures obtained for this rubber under a

Card 1/2

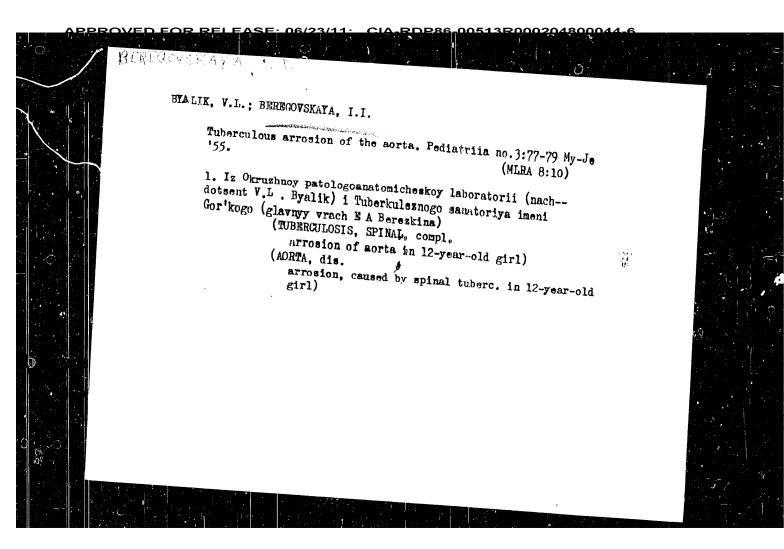
83841 \$/138/60/000/004/007/008

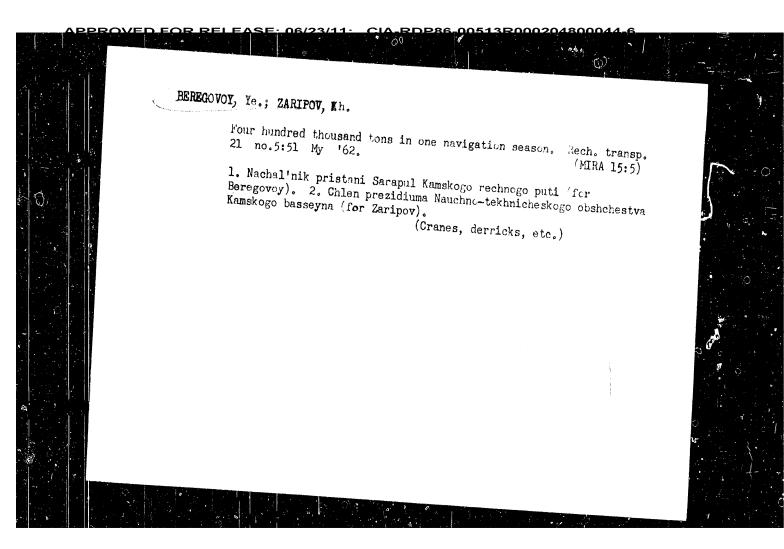
The Effect of Dispersion of Manganese Dioxide on the Rate of Vulcanization and the Physico-Mechanical Properties of Liquid Thiocol Vulcanizates

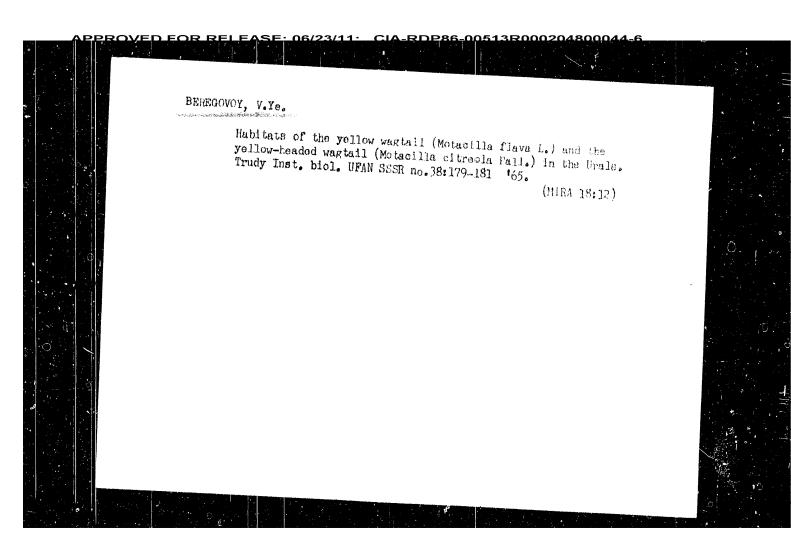
separated by passing them through the same screen varies and depends on the fractional composition of the initial manganese dioxide. The greater the residue on the screen 60 manganese dioxide, the less dispersed are the separated fractions. 3) Passing manganese dioxide through the screen 60 does not ensure the obtaining of a homogeneous and sufficiently finely dispersed from the liquid thiocol. 4) The inconsistancy of the manganese dioxide content in the pastes within the range determined by its varying content in the of the liquid thiocol. The pastes with a higher content of manganese dioxide but crudely dispersed, give the worst results as to the disappearance time of adhesiveness and the extent of the tear-resistance of the vulcanizates. She placed on the dispersion of the manganese dioxide and that the dispersion be evaluated by the hydrogen peroxide method. There are 3 tables.

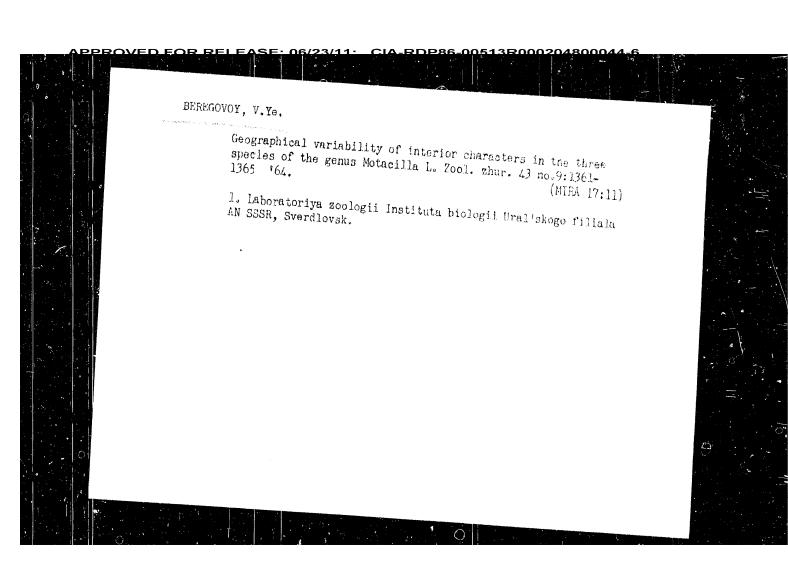
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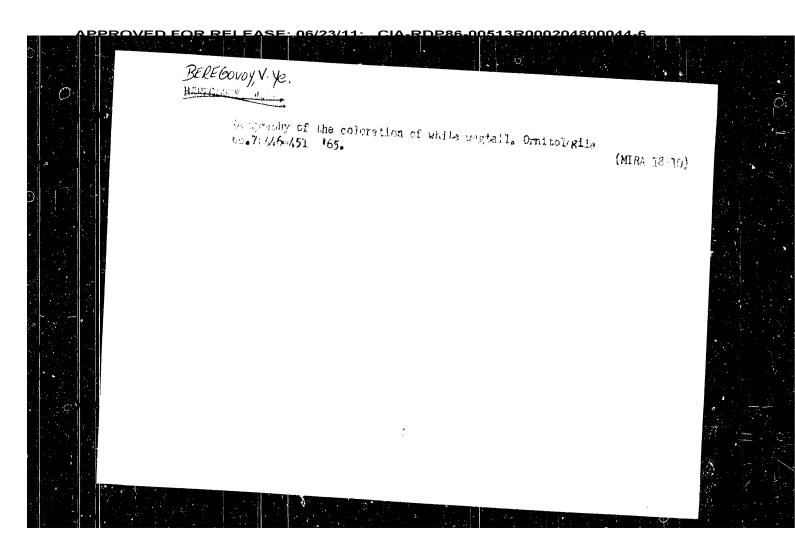
1153 15.9120 838/12 2209 S/138/60/000/004/007/008 11.2213 2109 A051/A029 AUTHORS: Beregovskaya, M.G., Nasonova, A.N., Mulyukova, S.G. TITLE: The Effect of Dispersion of Manganese Dioxide on the Rate of Vulcanization and the Physico-Mechanical Properties of Liquid Thiocol Vulcanizates PERIODICAL: Kauchuk i Rezina, 1960. No. 4, pp. 37 - 39 TEXT: The investigation results are outlined of the effect of dispersion of manganese dioxide on the vulcanization rate and the physico-mechanical properties of liquid thiocol vulcanizates. The experimental procedure is described and as a result of the data obtained in the experiments the following conclusions are drawn: 1) The manganese dioxide dispersion has a considerable effect on the vulcanization rate and on the physico-mechanical properties of liquid thiocol vulcanizates. With a decrease in the degree of dispersion the disappearance time od adhesiveness increases and the stability of the vulcanizates drops. An increase in the dispersion of the manganese dioxide brings about a decrease in the disappearance time of the adhesiveness and the vulcanizates become more stable. 2) The dispersion of the fractions

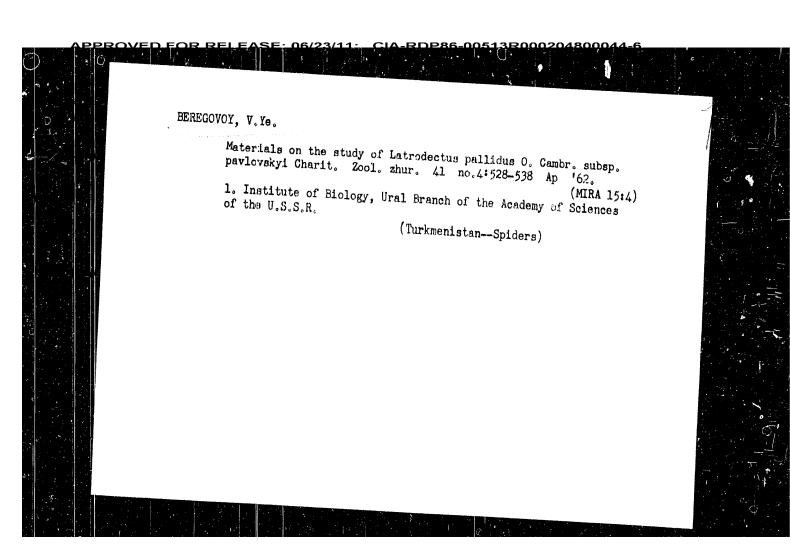


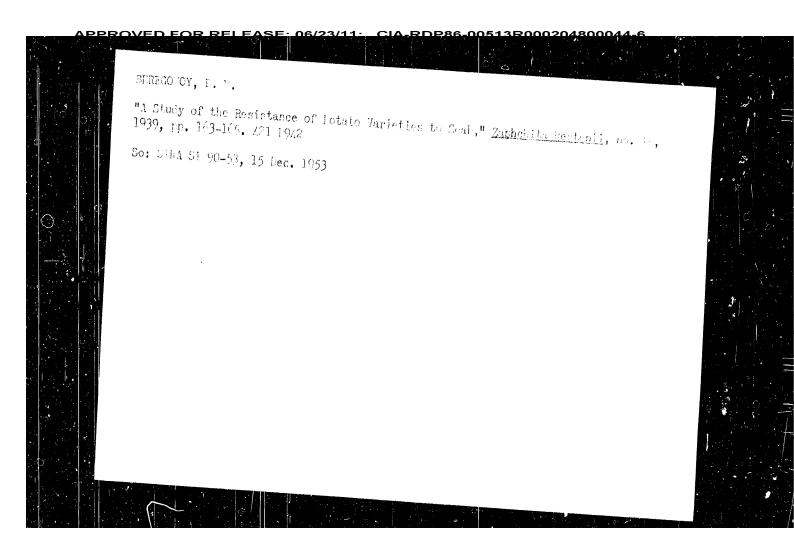


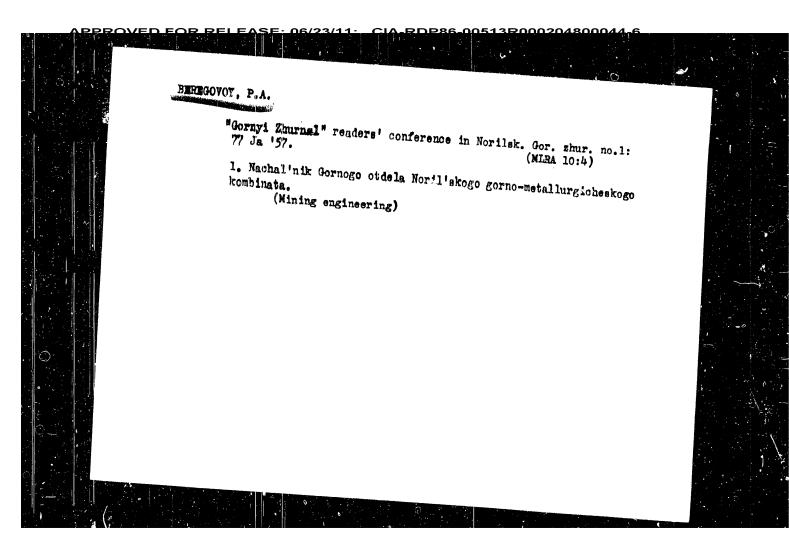


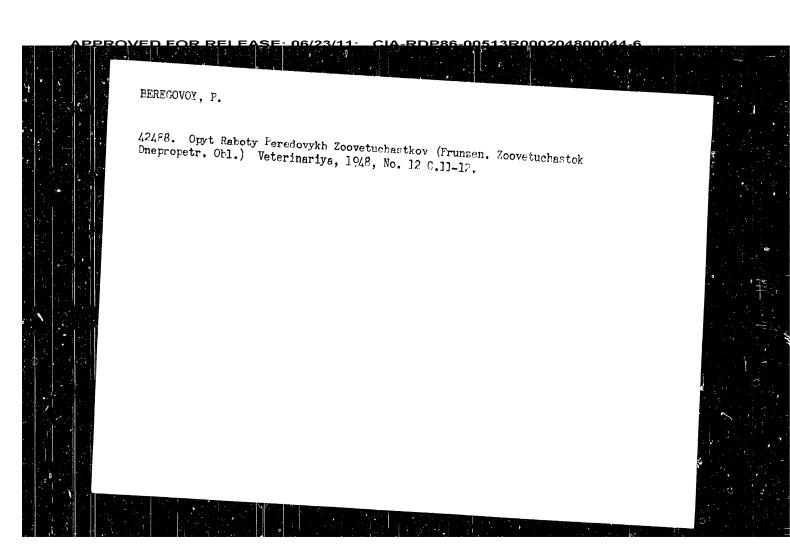


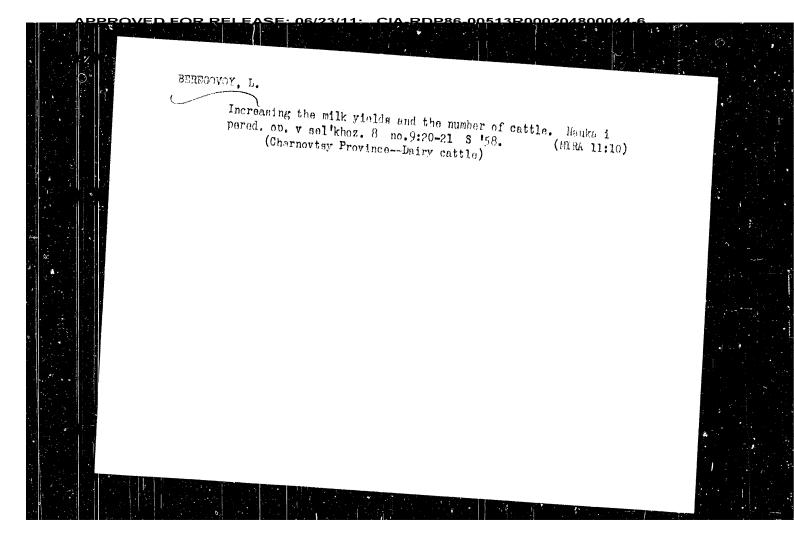


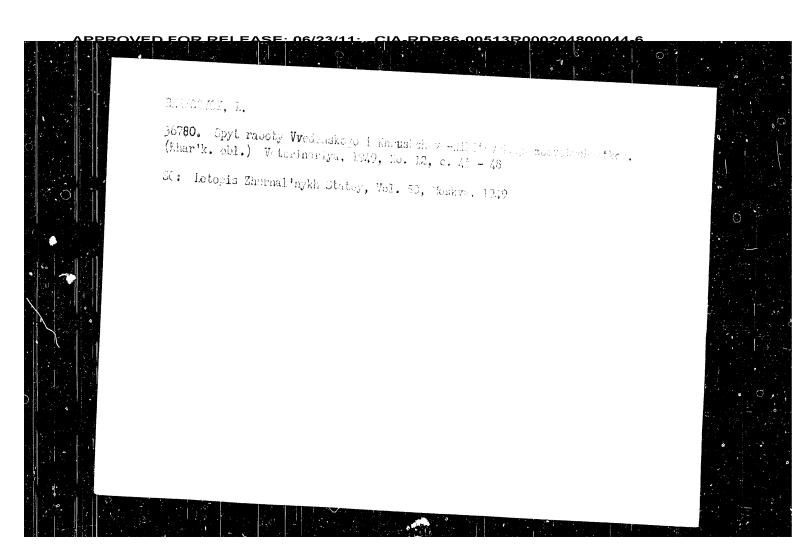


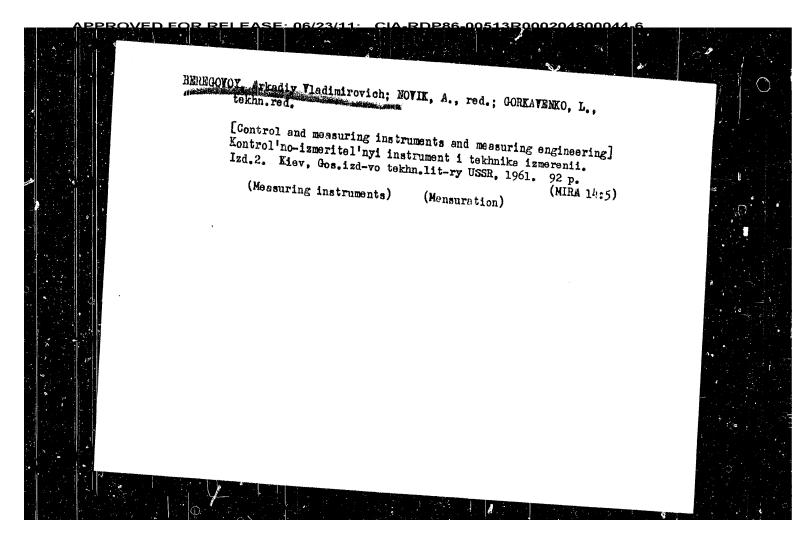












ACCESSION NR: AT4042657

drop in gas exchange during the initial stages of a hypoxia probe followed by delayed normalization.

ASSOCIATION: none

SUBMITTED: 27Sep63 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

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acute hypoxia consisted of an oxygen-mitrogen mixture (9.3--10.9% oxygen in the first series and 8.0 -8.5% oxygen in the second). Investigations were conducted following protonged sleep, on an empty stomach, and when subjects were in a supine position. Frequency, depth and rhythm of respiratory movement, and the maximum capacity of the lungs were measured spirographically. Lung ventilation was measured using a gasometer, and gas exchange was determined by the Douglas-Holden method. In the first series, (9.3--10.9% oxygen), the mean increase in lung ventilation was 24% whereas in the second series the increase was 47%. Respiratory volume increased by 28% in the first series and 51% in the second. Oxygen consumption in the first series fell 11% in the first 15 min but reached 98% of the normal value after 50 min. In the second series, oxygen consumption fell 71% and reached only 79% of the normal value by the end of the test. Respiration rate did not vary appreciably in either series. The authors conclude that low resistance to hypoxia is indicated by a lack of noticeable change in the volume of lung ventilation or a sharp rise thereof (greater than 100%), decreased depth of breathing, decreased vital capacity of the lungs (40% and more), and a sharp

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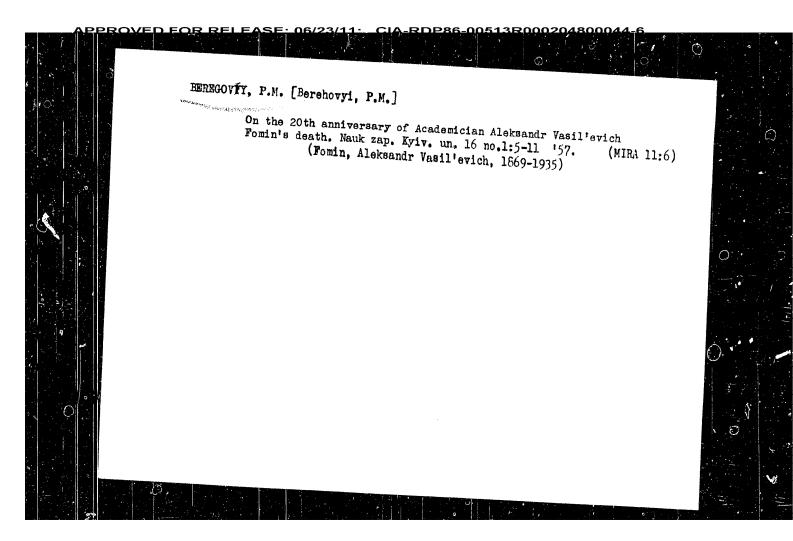
AUTHOR: Beregovkin, A. V.; Buyanov, P. V.; Malkin, V. B.

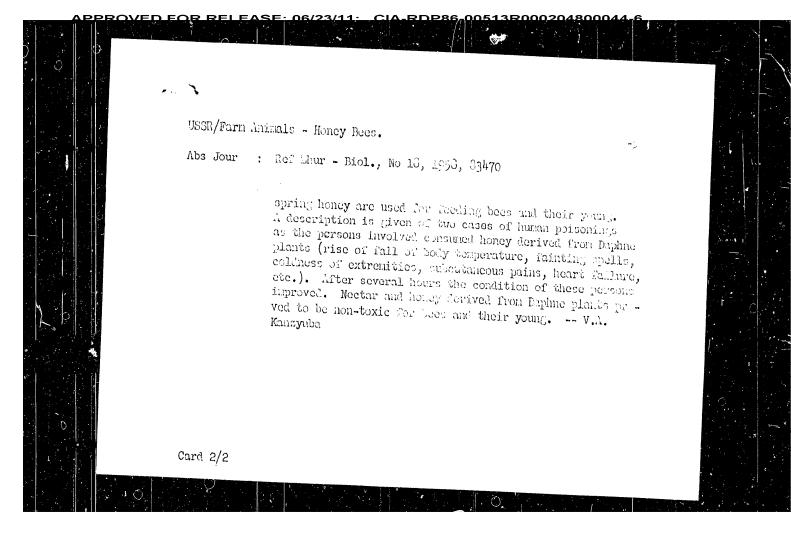
TITLE: Respiration and gas exchange during acute hypoxia

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicneskaya meditsina (Aviation and space medicine); materialy* konferents:i. Moscow, 1963, 72-75

TOPIC TAGS: hypoxia, respiration, gas exchange, diagnostic tool, low oxygen mixture, respiratory volume, oxygen consumption

ABSTRACT: Hypoxia is a recognized diagnostic tool for determining the reserve potential of the nervous syster. respiration, and circulation in healthy individuals. It is also a useful mechanism for detecting the initial stages of some diseases. The purpose of this study was to determine some general mechanisms of breathing through individual response to acute hypoxia in 54 healthy male subjects aged 20--23 years. The medium for producing





1,-5 USSR/Form Animals - Honey Bees. : Rel Zhur - Biol., No 18, 1958, 83470 Abs Jour : Deregoviy, P.M. Author University of Kiev. Inst Toxicity of Honey Derayed From Daphne Plants. Title : Mauk. map. Kievek. un-4, 1955, 13, No 16, 79-80. Orig Pub : In USCR there are 15 species of the Daphne plant. All Abstract parts of this plant, including some parts of its blooms such as pollen and nectar, contain the poisonous substances of daphnin and memorin. Although these plants secret large quantities of nectar and are frequently visited by Lees, they are not instrumental for large hency reserves being produced in hives, sames the plant blooms in early spring when the weather is selden warm and bee colonies are not yet strong. Desides, the first collections of Card 1/2

ACC NR. A76036508

Deconditioning symptoms were less pronounced in subjects who exercised or compressed their lower extremities during hypokinesia.

The genesis of the observed shifts is complicated. Most likely, the inert state of adaptive mechanisms which regulate cardiovascular activity during transition from one level of physical activity to another is responsible. It is suggested that under conditions of prolonged hypokinesia and decreased hydrostatic pressure, proprioceptive and angloreceptive signalization is decreased, which leads to a weakening of reciprocal afterent-effector activity. Transition to activity leads to a steady recovery of these disrupted relationships. [W.A. No. 22; ATD Report 66-116]

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L 11384-67

ACC NR. AT6036508

grams, EKG's and studies of the phase of cardiac activity. A dosed physical exercise test and passive orthostatic test were conducted. Tests were repeated after the experiment until all observed shifts had disappeared.

During hypokinesia there are decreases in arterial pressure, vascular tonus, and cardiac output and a noticable increase in peripheral resistance. These changes reach their limits in 4—8 days followed by stabilization at this level. Transition to a normal regimen produces noticeable shifts reflected in preliminary restriction of mobility and decreased blood hydrostatic pressure. Even under conditions of physical rest there is steady tachycardia, an increased volume of minute blood circulation, decreased vascular tonus, altered cardiac bioelectric activity and altered functional capacity of the myocardium. These changes are more dramatic during physical exercise and especially during the orthostatic test.

The most pronounced shifts reflecting a deconditioned state were observed within the first two or three days. Individual shifts were noticed 10—15 days after the experiment. More noticeable changes were observed in the water immersion group than in the bed-rest group.

Card 2/3

L 11384-67 EWT(1) DD/QD CC NR: AT6036508 SOURCE CODE: UR/0000/66/000/000/0080/0081 AUTHOR: Buyanov, P. V.; Beregovkin, A. V.; Pisarenko, N. V.; Slesarev, V. I. ORG: none TITIE: Prolonged hypokinesia as a factor altering the functional state of the cardiovascular system in healthy humans [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966] SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmiche skoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 80-81 TOPIC TAGS: hypodynamia, isolation test, cardiovascular system, human phys! alogy, space physiology ABSTRACT: The effects of prolonged bed-rest (11-men) and water immersion (2 men) were investigated. In all, 13 experiments were conducted on 11 healthy males aged 22-26. The duration of hypokinesia was 10-15 days. Tests were conducted to evaluate the usefulness of physical exercise (4 tests) and periodic compression of the lower extremities (2 tests) to diminish the deleterious effects of hypodynamia. Examinations of peripheral hemodynamics, intracardiac dynamics, cardiac bioelectricity, contraction capacity of the myocardium of the left venticle, and vascular tonus were conducted. This involved the use of tachooscillograms, arterial oscilloACC NR: AP7000137

personnal for service in hot climates or conditions. It was felt that it would be best first to examine selected subjects under hyperthermal conditions to determine their individual resistance to heat. Periodic medical examinations were recommended to test adaptive reactions or the collapse of acquired adaptation to heat. Orig.

SUB CODE: 06/ SUBM DATE: none/ ATD PRESS: 5109

APPROVED FOR RELEASE; 06/23/11: CIA-RDP86-00513R000204800044-6

ACC NR. AP7000137

SOURCE CODE: UR/0177/66/000/011/0040/0044

AUTHOR: Buyanov, P. V. (Lieutenant colonel, Medical service, Candidate of medical sciences); Beregovkin, A. V. (Major, Medical service)

ORG: none

TITLE: The effect of systematic exposure to high temperatures on the human organism

SOURCE: Voyenno-meditsinskiy zhurnal, no. 11, 1966, 40-44

TOPIC TAGS: human physiology, hyperthermia, biologic metabolism, heat biologic effect

ABSTRACT: Seventeen men aged 22-26 were tested in a hot room at temperatures ranging from 50-70C for one hr per day or every other day. The cardiovascular system, peripheral blood, respiration, and urine were analyzed. Orthostatic tests were also given in some tests. The changes observed during this experiment were judged to be typical of systematic exposure to high temperatures. Systematic exposure, especially on a daily basis, resulted in decreased arterial pressure, pulse rate, cardiac output, gas exchange, and pulmonary ventilation. These changes were felt to reflect the onset of processes of adaptation to high temperatures important to increasing human resistance to this factor. The data indicated that the individual physiological characteristics of the organism should be considered when selecting

Card 1/2

IDC: 612.591-06

ACC NR: AT6036481

The observed shifts in physiological indices were short-term and reversible. They indicated the development of moderately marked fatigue in the subjects. Thus, despite the complexity of the flight, the postflight examinations revealed only moderate functional changes in the two cosmonauts. There was no difference in the nature of these changes in the cosmonauts. This indicates a high degree of training and a good neurop sychological and physical preparation for spaceflight.

[W.A. No. 22; ATD Report 66-116]

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1. 08268-67

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Their pulse showed a certain lability. Pulse frequency rose significantly during mild physical exertions and changes in the position of the body. There was an increase in intraventricular conductivity, an increase in the systolic index (7—11%), and a delay in restoration of hemodynamic indices after physical exercise.

Belyayev's oxygen consumption increased by 23% and Leonov's by 14% as compared with preflight levels. Vital capacity of the lungs diminished by 8—12%, while pulmonary ventilation increased by 51—18%.

Neurological examinations revealed a light tremor of the fingers, a high orthostatic reflex with an absence of pulse reaction to the oculocardiac reflex, and an increase in the slow bioelectrical activity of the brain cortex. Psychological tests revealed an increase in distribution and in the middle magnitudes of the duration of the period of sensory motor reaction. Since this was not accompanied by errors, it is possible to assume that the fatigue observed in cosmonauts was a compensatory reaction. Blood and urine examination on the third day after flight did not differ substantially from preflight levels. Biochemical examination uncovered an increase of chlorides, adrenalin, noradrenalin, and 17-oxycorticosteroids in the urine.

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AUTHOR: Arzhanov, I. M.; Bryanov, I. I.; Baturenko, V. A.; Beregovkin, A. V.; Buyanov, P. V.; Kovalev, V. V.; Kondrakov, V. M.; Krasovskiy, A. S.; Kuznetsov, O. N.; Kuznetsov, S. V.; Nikitin, A. V.; Nistratov, V. V.; Teret yev, V. G.; Fedorov, Ye. A.; Khlebnikov, G. V.

ORG: none

52 13+1

TITLE: Some results of the postflight examination of P. I. Belyayev and A. A. Leonov following their flight on the <u>Voskhod-2</u> spacecraft [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 36-37

TOPIC TAGS: space medicine, postflight medical examination, bodily fatigue, body weight, cardiovascular system, oculocardiac reflex, unconditioned reflex, space psychology, oxygen consumption, respiration, pulmonary ventilation/Voskhod-2

ABSTRACT: Postflight examinations of the Voskhod-2 crew members, Leonov and Belyayev, were performed on the third and fourth days after the flight and again a month later. The cosmonauts complained of light fatigue. They were found to have hyperemia of the mucosa of the nose and throat and conjunctivitis of the eyelids and eyeballs. They had lost weight

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ing ship, there is reason to attribute them to limitation of motor activity under conditions of weightlessness. The functional shifts found after flight are indicating of a general fatigue, a moderate stress reaction, and a certain arm of detraining. In general, the changes observed in the cosmonauts of one type. The differences found between the cosmonauts can buse ributed to individual differences. [W.A. No. 22; ATD Report 66-116]

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psychological experiments (increase in the number of mistakes, increase in latent periods).

Indices of cardiovascular activity during rest did not exceed wide norms. However, an increase in pulse frequency was noted (Komarov up to 96, Feoktistov up to 100, and Yegorov up to 94 beats/min), as well as moderate drop in arterial pulse pressure at the expense of an increase in diastolic pressure. All three cosmonauts, when subjected to exercise, showed a significant increase in the pulse rate and inertia in the stroke volume. Feoktistov and Yegorov showed a significant diminution in the heart stroke volume and minute circulation of the blood

Postflight blood examinations indicated neutrophilic leukocytosis and eosinopenia. Urine was found to comain significant quantities of salts, chiefly urates, single erythrocytes (in the field of vision), and an increase in the excretion of 17-oxycorticosteroids. Eosinopenia, an increase in excretion of products of hormone decomposition, indicated the development of a stress reaction in cosmonauts. Since some of the indications found on the flight were also found after training in the train-

during the passive orthostatic test. This could indicate a discuption of

the venou. Allow to the heart.

L USE 09-67 ACC NR. AT 6036480

L 08269-67 ACC NR. AT6036480 external respiration of the cosmonauts. Physical exercises and orthostatic tests were included to detect earlier signs of physiological shifts. Examinations were carried out before and after training in the ship, where certain conditions of flight were simulated, and also two weeks before flight. Postflight examination was begun fifteen minutes after landing and was continued for the first four days after the flight and also two weeks later. After landing, the cosmonauts were active, looked somewhat excited, and complained of general fatigue. They were found to have hyperemia of the mucosa of the upper respiratory tract and conjunctivitis. Komarov's weight dropped by 2.6%, Feoktistov's weight dropped by 4%, and Yegorov's by 3.9%. Weight loss was determined by Zhdanov to be due to water and fat loss. Neurological examination revealed a light swaying in the Romberg position, a tremor of the fingers, and increased perspiration. In addition, Yegorov showed a contraction of the retinal arteries. Disruption of vision and vestibular difficulties were not noted. Changes in EEG indicated an increase in inhibitory processes in the cortex of the brain. A diminution in work capacity was established by Card 2/4

ACC NR. AT6036480 SOURCE COURT UN/0000/66/000/000/0031./0036 AUTHOR: Arzhanov, I. M.; Beregovkin, A. V.; Bryanov, I. I.; Buyanov, P. V.; Zaloguyev, S. N.; Kamen shchikov, Yu. V.; Kovalev, V. V.; Krasovskiy, A. S.; Kuznetsov, S. V.; Litsov, A. N.; Nikitin, A. V.; Nistratov, V. V.; Poruchikov, Ye. A.; Potkin, V. Ye.; Teret'yev, V. G.; Fedorov, Ye. A.; Khlebnikov, G. F.; Yaroshenko, G. L. ORG: none 6+1 TITIE: Results of clinical and physiological investigations of the crew of the first multiman Voskhod spacecraft [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966] SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1965, 34-36 TOPIC TAGS: space medicine, space physiology, weightlessness, bodily fatigue, stress reaction, combined stress, cardiovascular system, central nervous system, manned spaceflight/Voskhod-1 ABSTRACT: The inclusion of a physician in the crew of the Voskhod-1 made it possible to increase medical investigations of the crew members during flight and to compare them with results of preflight and postflight examinations. The scope of the physiological examinations was selected in order to obtain a more complete evaluation of the functional condition of the cardiovascular and central nervous systems, and the function of Card 1/4

BeRegnin, P.M. USSR/Forestry - Forest Plants. K-5 Abs Jour : Ref Zhur - Biol., No 2, 1958, 5936 Author : Beregoviy, P.M. Inst : Kiev University Title : Securing the Sands in River Bottom Lands. : Nauk. zap. Kiivs'k. un-t, 1955, 13, No 16, 49-52 (Ukrainian with Russian resume). Orig Pub Abstract : No abstract. Card 1/1

L 29924-66 ACC NR: AP6018960 ventilator is powered by an AV-062-4 motor (180 w), which maintains an airflow in the refrigeration chamber of 1-1.5 m/sec (depending on the dimensions of the object being cooled). The KT-1 temperature relay maintains an ambient temperature of -2 to -3C. A temperature regulator in the subject's rectum turns off the cooling apparatus when the set temperature is reached, and turns it on when body temperature rises to 0.3-0.4C above it. Fig. 3 shows a graph of the change in human body temperature depending on the cooling period at OC. A year of use showed that this hypothermia apparatus lowers body temperature sufficiently rapidly, is easily controlled, is capable of maintaining a given body temperature automatically, and does not cause any irreversible processes. Use of the hermetic refrigerating unit and low-noise ventilators increases the operational reliability of the entire apparatus and decreases vibration and noise. Orig. art. has: 4 figures. [JS] SUB CODE: 06/ SUBM DATE: none/ ATD PRESS: 50//

ACC NR. AP6018960

32C it is possible to stop circulation for 1.1—1.2 hr. A hypothermia apparatus — the "gipoterm" or hypotherm — was invented by workers at the Yaroslavl' Refrigerator Plant in cooperation with A. K. Shipov, Professor at the Surgical Clinic line. Solowlyev, assisted by V. V. Katanskiy. A dagram of this compact, portable, fully automated apparatus is given in Fig. 2. Its external appearance is shown in Fig. 1. The device, which is insulated with aluminum foll, moves on three rollers. The hermetic refrigeration unit (freen-12) is mounted on shock absorbers. The K-95

Fig. 3. Change in human body temperature depending on the duration of cooling at OC (smbient temperature)

1 - Rectal temperature (experimental);
2 - temperature of upper layers of cerebral cortex (calculated).

